



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8, MONTANA OFFICE
FEDERAL BUILDING, 10 West 15TH Street, Suite 3200
Helena, MT 59626-0096
Phone 866-457-2690
www.epa.gov/region8

Ref: 8MO

July 8, 2019

Mr. Josh Bryson
Operations Project Manager
Atlantic Richfield Company
317 Anaconda Road
Butte, MT 59701
On behalf of Respondents

Re: Comments on the Draft Butte Priority Soils Operable Unit (BPSOU) Groundwater Monitoring Quality Assurance Project Plan and Sampling and Analysis Plan (dated March 13, 2019)

Dear Josh:

The U. S. Environmental Protection Agency (EPA), in consultation with the Montana Department of Environmental Quality (DEQ), is providing comments on the *Draft Butte Priority Soils Operable Unit (BPSOU) Groundwater Monitoring Quality Assurance Project Plan (QAPP)* (dated March 13, 2019) and *Sampling and Analysis Plan (SAP)* (dated March 13, 2019). Please address the comments below and in the attached EPA document review crosswalk and submit a revised final version of the plan(s) for EPA/DEQ review.

Draft BPSOU Groundwater Monitoring QAPP

General Comments:

- 1) The SAP and the QAPP documents contained substantial duplicative information which made the review much more difficult. EPA would prefer a single document in the form of a stand-alone QAPP which contains all the required elements. For 2019, EPA will approve a separate groundwater SAP and QAPP, but expects future versions of this document to be a stand-alone QAPP with a single crosswalk.
- 2) Note: EPA and DEQ anticipate that AR will be resubmitting the QAPP and SAP to include discussion of the process for establishing Points of Compliance (POC) wells. The POC wells will be new, existing, or a combination of new and existing POC wells.

Specific Comments:

- 1) List of Acronyms and Abbreviations. The correct definition for pH is "-log of the hydrogen ion

activity", not "hydrogen ion concentration". Please correct.

2) Section 2.2. An arsenic concentration of 23 mg/L was measured in MW-3 on 10/28/89. A cadmium concentration of 20.3 mg/L was measured in LP-09 on 6/7/09, and a lead concentration of 3.5 mg/L was measured in GS-17S on 8/1/89. These values are higher than the maximum values stated. If the values reported in the paragraph represent a subset of the groundwater database, then please state the time frame, geographic area, unit, etc. for which these ranges apply. Otherwise, please correct maximum values.

3) Table 1. The method detection limits in 200.8 are slightly different than for 6020A. Table 1 was edited from method 6020A in the 2018 GW QAPP to 200.8 in the current version without any adjustment of the MDLs or RLs. Please update the table to reflect method 200.8 MDLs and RLs. Also, calcium, iron, sodium, potassium, and magnesium are included in EPA Method 6020A, but not EPA 200.8, at least as of the 1994 revision. Please make sure that Pace can add these elements to 200.8 given the often high concentrations in the samples (i.e., higher than in a drinking water). Pace may need to run them using ICP-AES (method 200.7) as opposed to ICP/MS (200.8). Given the importance of carbon dioxide degassing from groundwater, pH values should be measured in-situ if possible or immediately upon collection if a flow-through cell is not practicable. A sample in an open container awaiting field measurements can degas carbon dioxide resulting in a pH increase over time. Please indicate how the potential for CO₂ degassing will be handled when measuring pH.

4) Section 2.4.1, Step 6. The TREC data validation SOP is not attached in Appendix A. Please add.

5) Table 5. The methods shown in Table 5 for metals (6010 and 200.7) do not match Table 1 (200.8). Please correct. If Table 5 should have method 200.8 for metals then the control limits need to be modified (see Table 8 in method 200.8). Also, please check all QA/QC requirements. The QC procedures are bit more stringent for 200.8 vs 6010 or 6020. Table 5 also lists method SM 4500 (ion selective electrode) for chloride, while Table 1 lists EPA 300.0 (ion chromatography).

6) Section 3.4.3, Laboratory Equipment. Please add "ion selective electrodes" for the SM 4500 methods (i.e., fluoride, nitrate/nitrite, etc.) if the Table 5 methods are valid.

7) Section 3.5.2, Laboratory Duplicates and Matrix Spike/Matrix Spike Duplicate. The LD sample measures the precision of the site sample analysis, while the MSD measures the precision on the spike analysis, which are different. The MSD measures precision at higher metals concentrations than the LD. Please retain the LD samples.

8) Appendix A. GW-01, TREC Data Validation, GW_5 are missing from the Appendix. Please provide.

Draft BPSOU Groundwater Monitoring SAP

General Comments:

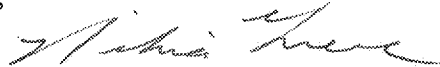
1) The SAP and the QAPP documents contained substantial duplicative information which made the review much more difficult. EPA would prefer a single document in the form of a stand-alone QAPP which contains all the required elements. For 2019, EPA will approve a separate surface water SAP and QAPP but expects future versions of this document to be a stand-alone QAPP.

Specific Comments:

- 1) List of Acronyms and Abbreviations. The correct definition for pH is “-log of the hydrogen ion activity”, not “hydrogen ion concentration”. Please correct.
- 2) Section 2.2. In the third sentence, TI is technical impracticability. Please revise.
- 3) Table 2. Please check the MDLs and RLs for EPA Method 200.8. Note that the values are different from 6020A.
- 4) Table 3. AMW-13A (a.k.a., AMW-13), AMW-13B, AMW-13C, BPS07-01A, BPS07-01B, BPS07-05A, BPS07-05B, BPS07-16A, BPS07-16B, BPS11-11A1, BPS11-11A2, BPS11-11B, and BPS11-11C are the POC wells within the BPSOU water quality monitoring network. Please propose revisions to Table 3 accordingly.
- 5) Section 2.4.1, Step 6. In order to conduct data validation according to the *National Functional Guidelines for Inorganic Superfund Methods Data Review* (EPA, 2017), a Level 4 data package is required. The QAPP indicates that the non-compliance wells will be analyzed via Level 2 data requirements, which will limit validation that can be performed. Please specify in either the SAP or QAPP the data validation steps that will be performed with the Level 2 data packages.

If you have any questions or concerns, please call me at (406) 457-5019.

Sincerely,



Nikia Greene
Remedial Project Manager

Attachment: EPA Document Review Crosswalk

cc: (email only)
Butte File
Jenny Chambers; DEQ
Daryl Reed; DEQ
Jon Morgan; DEQ counsel
Tom Stoops; DEQ
Carolina Balliew; DEQ
Pat Cunneen; State NRD Program
Jim Ford; State NRD Program
Harley Harris; State NRD Program
Katherine Hausrath; NRD Program counsel

Dave Palmer; BSBC
Jon Sesso; BSBC
Mollie Maffei; BSBC
David Schultz; BSBC
Eric Hassler; BSBC
Brandon Warner; BSBC
Karen Sullivan; BSBC
Julia Crain; BSBC
Anne Walsh; UP
Robert Bylsma; UP counsel
John Gilmour, UP counsel
Leo Berry; BNSF and UP counsel
Yueh Chuang; BNSF
Brooke Kuhl; BNSF counsel
Jeremie Maehr; Kennedy Jenks for BNSF and UP
Bob Andreoli; Patroit/RARUS
R. Schellig; counsel for Patriot/RARUS
Becky Summerville; counsel for Inland Properties Inc.
Dawn Maack; counsel Inland Properties Inc.
Robert Lowry, BNSF counsel
John Ashworth, BNSF counsel
Cord Harris; AR/BP
Loren Burmeister; AR/BP
Jean Martin; Counsel AR/BP
William Duffy; attorney for AR/BP
Mave Gasaway; attorney for AR/BP
Pat Sampson; Pioneer for AR/BP
Craig Deeney; TREC
Scott Bradshaw; TREC
Mike Borduin; Pioneer for AR/BP
Karen Helfrich; Pioneer for AR/BP
Brad Archibald; Pioneer for AR/BP
Don Booth; AR consultant
Ted Duaime; MBMG
Gary Icopini; MBMG
David Shanight, CDM Smith
Curt Coover, CDM Smith
Chapin Storrar; CDM Smith
Henry Elsen, EPA
Jim Freeman, US DOJ
Joe Vranka; EPA
Chris Wardell; EPA
Jean Belille; EPA
Janice Hogan; CTEC